

**PATENT**

Agent's Docket No. 15904-US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	)	
	)	
<b>PANUNTO, John P. et al.</b>	)	
	)	
Serial No: 10/660,533	)	Art Unit: 3653
	)	
Filed: 09/12/2003	)	Examiner: <b>MORRISON, Thomas A.</b>

For: **LARGE CAPACITY BOTTOM FEED DISPENSER**

July 24, 2007

Box Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
U.S. Patent and Trademark Office  
Alexandria, Virginia 22313-1450

**Response to Notification of Non-Compliant Brief**

In response to the notification of non-compliant brief mailed 06/27/2007, Applicant is re-submitting the Appeal Brief filed on April 24, 2007.

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**APPELLANT'S APPEAL BRIEF**

This brief is in support of a Notice of Appeal filed in the above-identified application on December 12, 2006, to the Board of Patent Appeals and Interferences appealing the Final Office Action dated June 15, 2006.

**DEPOSIT ACCOUNT AUTHORIZATION**

The Commissioner is hereby authorized to charge Deposit Account No. 13-1717 for any fees required by this paper and not otherwise paid for.

### **1. Real Party in Interest**

The rights in this application are assigned to PSI Peripheral Solutions Inc. 3535 Laird Road, Mississauga, Ontario, Canada, L5L 5Z4.

### **2. Related Appeals and Interferences**

None.

### **3. Status of Claims**

Claims 1, 7, 11 have been cancelled. Claims 2 to 6, 8 to 10 and 12 to 13 remain for consideration in this application. Claims 2 to 6, 8 to 10 and 12 to 13 have been examined and rejected in a Final Office Action mailed June 15, 2006. Claims 2 to 6, 8 to 10 and 12 to 13 are being appealed.

A copy of the claims on appeal is included as the claims appendix. The claims in the claims appendix are those examined in the Final Office Action.

### **4. Status of Amendments**

In the Final Office Action mailed June 15, 2006, the Examiner raised formal objections to claims 2-6, 8-10, 12-13. In the response of September 14, 2006, Appellant amended claims 9 and 13 to address these objections. The Examiner rejected entry of these amendments in the Advisory Action mailed September 29, 2006. Thus, the claims in the attached Appendix are the claims examined in the Final Office Action.

### **5. Summary of claimed subject matter**

#### Claim 13

The following summary of the subject matter of independent claim 13 is made with reference to the description and figures.

Referring to Figures 1 and 3, claim 13 is directed to a dispenser 10 for dispensing flat media serially to a discharge end (page 10, lines 13-14). As further recited in claim 13, the dispenser 10 comprises a media storage bin 12 for storing a stack of flat media elements, the bin having a bottom end (page 10, lines 15-17). The dispenser 10 also comprises a driven rear conveyor 16 (page 10, lines 18-21) extending under the bottom end of the media storage bin 12 for carrying away flat media elements from the bottom of

the stack (page 5, lines 18-19 and seen specifically in Figure 3) in a shingled relationship wherein the flat media elements lie flat on the conveyor with the leading edge of one said media element overlying the trailing edge of a preceding said media element (page 10, lines 5-12), the driven rear conveyor 16 being driven intermittently at a first linear velocity  $V_R$  (page 12, lines 15-16). As recited in claim 13, the dispenser 10 also comprises a coarse media separator 14 (page 10, line 17-21 and seen specifically in Figure 2). The coarse media separator comprises a first nip roller 26 defining a nip with the rear conveyor 16 (best seen in Figure 1), said first nip roller 26 cooperating with the rear conveyor 16 to feed said media elements off the bottom of the stack onto said rear conveyor 16 in said shingled relationship (page 11, lines 11-16).

Referring to Figure 2 and as recited in claim 13, the dispenser 10 also comprises a first height adjustment mechanism 40 for setting a first vertical spacing between the first nip roller 26 and the rear conveyor 16 to allow said media elements to pass through said nip in said shingled relationship (page 11, lines 24 to page 12, line 5).

Referring to Figures 1 and 3 and as recited in claim 13, the dispenser 10 also comprises a driven front conveyor 20 downstream of said rear conveyor 16 for receiving the flat media elements from the rear conveyor 16 (page 5, lines 21-22), the driven front conveyor 20 being driven intermittently at a second linear velocity  $V_F$  (page 12, lines 18-20). Still referring to Figures 1 and 3 and as recited in claim 13, the dispenser 10 also comprises a single media separator 18 (page 10, lines 22-24; an exploded view of single media separator 18 is seen in Figure 4) comprising a second nip roller 28 cooperating with said driven front conveyor to define a nip to separate said shingled media elements received from the rear conveyor 16 into single media elements (page 11, lines 21 to 23).

Referring to Figure 4 and as recited in claim 13, the dispenser 10 also comprises a second height adjustment mechanism 44 for setting a second vertical spacing between the second nip roller 28 and the front conveyor 20 to allow said media elements to pass through said nip one at a time as separated media elements (page 11, lines 26 to page 12, line 2; page 12, lines 6-13).

Referring to Figures 1 and 3 and as recited in claim 13, the dispenser 10 also comprises a transport conveyor 22 for carrying the single flat media elements from said front conveyor 20 to said discharge end 24 (page 10, lines 24-26), the transport conveyor being driven intermittently at a third linear velocity  $V_T$  (page 12, lines 24-25).

Referring to Figure 3 and as recited in claim 13, the dispenser 10 also comprises a first sensor 30 responsive to the presence or absence of a media element at the discharge end to stop operation of the transport conveyor (page 11, lines 3-5).

Referring to Figures 1 and 3 and as recited in claim 13, the dispenser 10 also comprises a second sensor 32 responsive to the presence or absence of a media element on the transport conveyor to stop operation of the front conveyor (page 11, lines 5-6).

Referring to Figures 1 and 3 and as recited in claim 13, the dispenser 10 also comprises a third sensor 34 responsive to the presence or absence of a media element at an input to the front conveyor to stop operation of the rear conveyor (page 11, lines 6-9).

Claims 2 to 6, 8 to 10 and 12

The following summary of the subject matter of dependent claims 2 to 6, 8 to 10 and 12 is made with reference to the description and figures. All of these claims depend either directly or indirectly on claim 13.

Claim 2 recites that  $V_F > V_R$ , and  $V_T \geq V_F$  (page 12, lines 20-23; page 13, line 1).

Claim 3 recites that said media storage bin 12 is arranged vertically or is inclined rearwardly at an angle less than  $30^\circ$  from the vertical (page 13, lines 25-27; Figure 1).

Claim 4 recites that each of said rear and front conveyors 16, 20 comprises at least two parallel conveyor belts (page 6, lines 21-22; Figure 3).

Claim 5 recites that said transport conveyor 22 comprises upper and lower conveyors 62, 64 (Figure 3) each having at least two parallel conveyor belts arranged so that the distance between the upper conveyor 62 and lower conveyor 64 is sufficient to secure single media elements 50 therebetween in driving relationship therewith (page 12, line 25 to page 13, line 3).

Claim 6 recites that said media elements 50 are chosen from the group consisting of: sheets of paper, pamphlets, booklets, brochures, catalogs, magazines, envelopes, CDs or DVDs in slip cases, CDs or DVDs in crystal cases or presentation cases, flyers, books, and, combinations thereof (page 13, lines 12 to line 22).

Claim 8 recites that said first sensor 30 operates to stop operation of said transport conveyor 22 when it senses the presence of media 50 thereat (page 14, lines 1-3; Figure 3).

Claim 9 recites that the dispenser 10 further comprises a box ready sensor 99 (Figure 3) to sense when a receiver for media being discharged from said discharge chute

is capable of receiving more media, and which operates to start operation of said transport conveyor when the receiver is capable of receiving more media (page 14, lines 13-18).

Claim 10 recites that whenever said front conveyor 20 starts its operation, said transport conveyor 22 also starts its operation (Figure 5; page 14, lines 8-10).

Claim 12 recites that said rear conveyor 16 comprises a plurality of conveyor belts arranged lengthwise along said dispenser (Figures 1, 2), each being driven at said first linear velocity  $V_R$  (page 14, lines 19-23).

## **6. Grounds of Rejection to be Reviewed on Appeal**

Issue 1: Claims 2-3, 5-6, 8, 10 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.).

Issue 2: Claims 4 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.) and further in view of U.S. Patent 4,928,944 (Goliez).

Issue 3: Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.) and further in view of U.S. Patent 5,358,229 (Groel et al.)

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims to the extent separately identified and argued below, do not stand or fall together.

## **7. Argument**

**Issue 1: Claims 2-3, 5-6, 8, 10 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.).**

Claim 13

A *prima facie* case of obviousness requires that the prior art references (or references when combined) must teach or suggest all the claim limitations. MPEP § 2143.

Claim 13 is an independent claim which recites:

“a second height adjustment mechanism for setting a second vertical spacing between the second nip roller and the front conveyor to allow said media elements to pass through said nip one at a time as separated media elements”.

Claim 13 also recites the presence of:

“a first sensor responsive to the presence or absence of a media element at the discharge end to stop operation of the transport conveyor; a second sensor responsive to the presence or absence of a media element on the transport conveyor to stop operation of the front conveyor; and a third sensor responsive to the presence or absence of a media element at an input to the front conveyor to stop operation of the rear conveyor.”

Appellant submits that the cited art does not teach or suggest all the claim limitations, as is required by MPEP § 2143. In particular, Holbrook and Bridges, either alone or in combination, do not teach or suggest a second height adjustment mechanism to allow media elements to pass through one at a time as separated media elements, and Holbrook and Wilson et al., either alone or in combination, do not teach or suggest the sensor arrangement of present claim 13.

It is reiterated that in accordance with the principles of the invention, as described in detail above, novel and unobvious bottom feed dispenser that permits even large sized media elements to be singulated is provided.

Rather than attempting to singulate the items in a first step, a first coarse separation is carried out, wherein the items are laid out on a conveyor in an overlapping relationship, and this is followed by a second separation wherein the overlapping items are separated into single elements. In this way, the dispenser can be used for not only sheet-like media, but large sized media.

In the Final Office action, under this rejection the Examiner has raised two arguments: A) That it would have been obvious to combine Holbrook and Bridges to

arrive at the single media separator and second height adjustment device as claimed in claim 13; and B) That it would have been obvious to combine Holbrook and Wilson et al. to arrive at the sensor arrangement as claimed in claim 13. Each of these are discussed in turn.

A. Holbrook and Bridges, either alone or in combination, do not teach or suggest the second height adjustment mechanism to allow media elements to pass through one at a time as separated media elements as recited in claim 13.

Holbrook discloses a dispenser which is useful for sheet-like articles, such as envelopes (see column 1, lines 37 to 41). There is no need or desire in Holbrook for height adjustment of rollers 169 and 217. In fact, Holbrook teaches that springs 235 and 241 urge the rollers of the first and second frames 161 and 185, respectively, downwards against the conveyor deck (see Abstract).

In contrast, the present invention is especially suitable for use with heavy items, such as catalogues. The weight of such items generally makes it very difficult to feed them singly off the bottom of a stack. In rejecting claim 13, the Examiner concedes that Holbrook does not teach or suggest a second height adjustment mechanism (see page 4, third paragraph of Final Office Action mailed June 15, 2006) from which it must follow that Holbrook lacks the feature recited in claim 13 of a second height adjustment mechanism to allow media elements to pass through one at a time as separated media elements. It is this feature that permits the present invention to enjoy the advantage of being useful in separating even large-sized media elements. However, the Examiner seeks to combine Bridges with Holbrook to produce the second height adjustment mechanism of claim 13. The Examiner has argued that it would be obvious for one skilled in the art to modify Holbrook to include a single media separator with a second height adjustment mechanism in view of Bridges.

Bridges discloses a prefeeder that conveys media in a stack therethrough for further processing. Bridges teaches that a nip adjustment knob 44 is used to deliberately set the distance that the roller 17 can move upward. There is no indication in Bridges of what the further processing of the media stack entails.

Clearly the references when combined do not teach or suggest all the claim limitations of claim 13. Both references fail to teach or suggest use of a second height



adjustment mechanism to separate media elements. Neither reference teaches, suggests or even appreciates the advantage of having such a second height adjustment mechanism to permit large-sized media elements to be singulated as does the present invention.

Holbrook discloses that roller 169 (analogues to the coarse media separator of claim 13) and roller 217 (analogues to the single media separator of claim 13) are urged downwards. It certainly teaches away from the rollers being height adjustable. "Prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303 (Fed. Cir. 1983).

Bridges is only directed to a prefeeder that conveys media in a stack therethrough for further processing. The prefeeder of Bridges is analogous to the coarse media separator of present claim 13, not to the single media separator. There is no teaching or suggestion of a second height adjustment mechanism to allow media elements to pass through one at a time as separated media elements as recited in present claim 13.

Accordingly, it is submitted that since each reference fails to teach or suggest a dispenser having a second height adjustment mechanism as recited in present independent claim 13, that a combination of Holbrook and Bridges cannot teach or suggest the same feature.

B. Holbrook and Wilson et al., either alone or in combination, do not teach or suggest the sensor arrangement of present claim 13.

The Examiner has also argued that it would have been obvious to combine the teachings of Wilson et al. with Holbrook to arrive at the first, second and third sensor arrangement as claimed in present claim 13.

The Examiner has stated that Wilson et al. teach controlling the speed of belt 18 of input feed 17, aligner 31 and second singulator feed assembly 50 to better enforce gap size between documents.

In Holbrook, the envelopes travel from station 2 along driven rollers 10 to belt 6. Along belt 6, they are input to singulator station 4 comprising first frame 161 and second frame 185. Roller 169 of the first frame 161 receives the envelopes along belt 6 which are then input to roller 217 of second frame 185 and finally output along belt 6 for further processing downstream to stations 8 and 9. Each of the first frame 161 and second frame

185 are pivotally mounted to shaft 173. It is specifically taught that the separation between stations 2, 4, 8 and 9 “is less than the length of the smallest envelope processable by the feeder 1” (see column 2, lines 34 to 36).

Therefore, in Holbrook there is no teaching or suggestion that the speed of the envelopes can be variable as they are input to and output from the singulator station 4. In fact, during the entire process the envelopes only travel along a single belt, namely belt 6. Further, motor 11 controls both shaft 173 and belt 6, so the belts of the first and second frames and belt 6 are all simultaneously controlled.

Appellant submits then that the teachings of Holbrook and Wilson et al. are so divergent, that one skilled in the art would not combine the teachings to arrive at the sensor arrangement of claim 13. “It is improper to combine references where the references teach away from their combination.” *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

#### Claim 5

With respect to claim 5, the Examiner has argued that “Holbrook shows the transport conveyor (9) has upper and lower conveyors”. However, it is submitted that in the present invention the transport conveyor serves to receives the output of documents from the single media separator. In Holbrook it is belt 6 that receives the envelopes from singulator station 4. Element 9 of Holbrook is a flat moistening station, which is provided as an additional processing station after the envelopes are singulated. This is not analogous to the transport conveyor of the present invention. Therefore, the “transport conveyor” of Holbrook does not comprise upper and lower conveyors.

Further, the Examiner has made the unsubstantiated comment that, even though none of Holbrook, Bridges and Wilson et al. teach the use of upper and lower belts, that it would be obvious to substitute a plurality of belts for the rollers. Applicant respectfully traverses this and respectfully requests that the Examiner cite art in support of this position.

Further, dependent claim 5 depends either directly or indirectly from independent claim 13, and includes all of the limitations of its respective parent claim. Therefore, this dependent claim is believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claim.

#### Claim 6

With respect to claim 6, the Examiner has made the unsubstantiated comment that a person skilled in the art would find it obvious to convey any suitable media on the Holbrook apparatus. The Examiner has once again inappropriately cited *In re Leshin* in support of this position. However, *In re Leshin* was concerned with the use of a plastic material chosen for its properties known to be suitable for its intended purpose. As mentioned above, Holbrook is intended for singulating sheet members such as envelopes, which are generally easier to singulate than heavy items, such as catalogues, which because of their weight are very difficult to singulate off the bottom of a stack. One skilled in the art attempting to use Wilson for singulating heavy material, such as catalogues, would encounter precisely the problems that the invention seeks to overcome, namely that because of the weight of the stack of documents any separator attempting to singulate the documents off the bottom of the stack without the claimed means would tend to jam or pass more than one item.

Further, dependent claim 6 depends either directly or indirectly from independent claim 13, and includes all of the limitations of its respective parent claim. Therefore, this dependent claim is believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claim.

#### Claim 10

With respect to claim 10, as mentioned above, the Examiner has erroneously equated the transport conveyor of the present invention with element 9 of Holbrook. However, element 9 of Holbrook is a flat moistening station, which is provided as an additional processing station after the envelopes are singulated. It is submitted that belt 6 of Holbrook serves as both the front and transport conveyors of the present invention. And therefore, Holbrook cannot teach or suggest that whenever said front conveyor starts its operation, said transport conveyor also starts its operation.

Further, dependent claim 10 depends either directly or indirectly from independent claim 13, and includes all of the limitations of its respective parent claim. Therefore, this dependent claim is believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claim.

Claims 2-3 and 8

Dependent claims 2-3 and 8 depend either directly or indirectly from independent claim 13, and include all of the limitations of its respective parent claim. Therefore, the dependent claims are believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claims.

**Issue 2: Claims 4 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.) and further in view of U.S. Patent 4,928,944 (Goliez).**

Dependent claims 4 and 12 depend either directly or indirectly from independent claim 13, and include all of the limitations of its respective parent claim. Therefore, the dependent claims are believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claims.

**Issue 3: Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,978,114 (Holbrook) in view of U.S. Patent 5,641,155 (Bridges) and further in view of U.S. Patent 6,550,764 (Wilson et al.) and further in view of U.S. Patent 5,358,229 (Groel et al.)**

Dependent claim 9 depends either directly or indirectly from independent claim 13, and includes all of the limitations of its respective parent claim. Therefore, this dependent claim is believed to be distinguishable over the cited references for at least the same reasons as those given to the respective parent claim.

Respectfully submitted,



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## Claims Appendix

1. (cancelled)
2. The dispenser of claim 13, wherein  $V_F > V_R$ , and  $V_T \geq V_F$ .
3. The dispenser of claim 2, wherein said media storage bin is arranged vertically or is inclined rearwardly at an angle less than  $30^\circ$  from the vertical.
4. The dispenser of claim 2, wherein each of said rear and front conveyors comprises at least two parallel conveyor belts.
5. The dispenser of claim 2, wherein said transport conveyor comprises upper and lower conveyors each having at least two parallel conveyor belts arranged so that the distance between the upper conveyor and lower conveyor is sufficient to secure single media elements therebetween in driving relationship therewith.
6. The dispenser of claim 2, wherein said media elements are chosen from the group consisting of: sheets of paper, pamphlets, booklets, brochures, catalogs, magazines, envelopes, CDs or DVDs in slip cases, CDs or DVDs in crystal cases or presentation cases, flyers, books, and, combinations thereof.
7. (cancelled)
8. The dispenser of claim 2, wherein said first sensor operates to stop operation of said transport conveyor when it senses the presence of media thereat.
9. The dispenser of claim 8, further comprising a box ready sensor to sense when a receiver for media being discharged from said discharge chute is capable of receiving more media, and which operates to start operation of said transport conveyor when the receiver is capable of receiving more media.

10. The dispenser of claim 8, wherein whenever said front conveyor starts its operation, said transport conveyor also starts its operation.
11. (cancelled)
12. The dispenser of claim 2, wherein said rear conveyor comprises a plurality of conveyor belts arranged lengthwise along said dispenser, each being driven at said first linear velocity  $V_R$ .
13. A dispenser for dispensing flat media seriatim to a discharge end, comprising:
  - a media storage bin for storing a stack of flat media elements, the bin having a bottom end;
  - a driven rear conveyor extending under the bottom end of the media storage bin for carrying away flat media elements from the bottom of the stack in a shingled relationship wherein the flat media elements lie flat on the conveyor with the leading edge of one said media element overlying the trailing edge of a preceding said media element, the driven rear conveyor being driven intermittently at a first linear velocity  $V_R$ ;
  - a coarse media separator comprising a first nip roller defining a nip with the rear conveyor, said first nip roller cooperating with the rear conveyor to feed said media elements off the bottom of the stack onto said rear conveyor in said shingled relationship;
  - a first height adjustment mechanism for setting a first vertical spacing between the first nip roller and the rear conveyor to allow said media elements to pass through said nip in said shingled relationship;
  - a driven front conveyor downstream of said rear conveyor for receiving the flat media elements from the rear conveyor, the driven front conveyor being driven intermittently at a second linear velocity  $V_F$ ;
  - a single media separator comprising a second nip roller cooperating with said driven front conveyor to define a nip to separate said shingled media elements received from the rear conveyor into single media elements;
  - a second height adjustment mechanism for setting a second vertical spacing between the second nip roller and the front conveyor to allow said media elements to pass through said nip one at a time as separated media elements;

a transport conveyor for carrying the single flat media elements from said front conveyor to said discharge end, the transport conveyor being driven intermittently at a third linear velocity  $V_T$ ; and

a first sensor responsive to the presence or absence of a media element at the discharge end to stop operation of the transport conveyor;

a second sensor responsive to the presence or absence of a media element on the transport conveyor to stop operation of the front conveyor; and

a third sensor responsive to the presence or absence of a media element at an input to the front conveyor to stop operation of the rear conveyor.

## **Evidence Appendix**

None.



**Related Proceedings Appendix**

None.